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Applicant(s): Tzu-Yu Wang et al.

Docket No.

15436.440.11

Application No.

10/606,104

Filing Date

June 25, 2003

Examiner

Phillip Nguyen

Customer No.

022913

Group Art Unit

2828

Invention:

LASER BASED LONG WAVELENGTH VCSEL

NOV 17 2005

I hereby certify that the following correspondence:

Pre-Appeal Brief Request for Review (6 pgs); Petition for Extension of Time to File Notice of Appeal (1 pg); Notice of Appeal (2 pgs, in triplicate); PTO-2038 Credit Card Form (1 pg); Certificate of Express Mail Label No. EV 773 542 488 US (1 pg); and Postcard

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**Pre-Appeal Brief Request for Review  
Examining Group 2828**

EXPRESS MAIL NO. EV 773 542 488 US

PATENT APPLICATION  
Docket No. 15436.440.11

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of		)
		)
	Tzu-Yu Wang et al.	)
		)
Serial No.:	10/606,104	) Art Unit
		) 2828
Filed:	June 25, 2003	)
		)
Confirmation No.:	4209	)
		)
For:	INP BASED LONG WAVELENGTH VCSEL	)
		)
Customer No.:	022913	)
		)
Examiner:	Phillip Nguyen	)

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the FINAL Office action mailed May 17, 2005 (the "Office Action"), the Applicants submit herewith a request for a Pre-Appeal Conference. Along with the substantive arguments of record, the Applicants submit herewith a succinct, concise and focused set of arguments for which the review is being requested.

### **REMARKS**

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicants request that the Examiner carefully review any references discussed below to ensure that Applicants understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

### **III. PRIOR ART REJECTIONS**

#### **B. Rejection Under 35 U.S.C. § 103**

The Examiner rejects claims 1-17 and 23-30 stand rejected under 35 U.S.C. § 103 as being unpatentable over *Jewell* (U.S. Patent No. 5,719,891).

Claim 1 requires that said one layer has an aluminum content of less than 60% before being oxidized. *Jewell* teaches that Aluminum will "comprise at least 60% of the group-III material in oxidizing, i.e. oxidizable layer." See col. 7, lines 12-14. *Jewell* further teaches that "Al[uminum] will comprise at least 60% of the group-III material in oxidized layers." See col. 9, lines 36-37. Because *Jewell* teaches that the oxidizable layer has at least 60% Aluminum, *Jewell* does not teach a layer with an aluminum content of less than 60%. As a result, *Jewell* does not teach or suggest each element of claim 1 and the Applicants respectfully request that the rejection be withdrawn. If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Therefore, claims 2-7 and 35 are also allowable for at least these reasons.

Claim 8 requires "a first mirror having a plurality of layers including at least one pair of layers having an InP layer and an oxidized layer". Claim 16 requires "a first stack of layers formed on said substrate, the first stack of layers including one or more layers of InP." Claim 23 requires "forming a first stack of layers on a substrate, wherein one or more of the layers in the

first stack of layers in InP layers.” Although the Office Action indicates that *Jewell* discloses, at col. 7, lines 4-9, that “one layer of at least one pair of the plurality of pairs of layers comprises InP, a review of *Jewell* as discussed at the interview indicates that *Jewell* does not teach these elements of claims 8, 16, and 23. As a result, *Jewell* does not teach or suggest every element of claims 8, 16, and 23 or the claims that depend therefrom. Therefore the Applicants respectfully request that the rejection of claims 8-30 and 36 be withdrawn at least for these reasons.

Claims 18-22 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Jewell* in view of *Kim et al.* (U.S. Patent No. 6,680,964). As discussed above, claims 18-22 depend from claim 16 and are allowable at least for the same reasons that claim 16 is allowable. Therefore, Applicants respectfully request that the rejection of claims 18-22 be withdrawn. Further, *Kim* does not teach “the first stack of layers including one or more layers of InP”. Rather, *Kim* teaches high aluminum content AlGaAs and low aluminum content AlGaAs for the first and second mirror stacks. See col. 5, lines 13-16. *Kim* teaches InP for the substrate, but does not teach InP in the mirror stacks. See col. 5, lines 19-20.

Further, Figures 1B-1C were cited as disclosing claim 16. However, Figures 1B-1C do not disclose “wherein approximately every other layer of said first stack of layers is at least partially oxidized”. While *Kim* does disclose oxidized portion 28, the oxidized portion 28 is used for current confinement and does not illustrate “every other layer” as discussed at the interview. See col. 3, lines 53-60. The oxidized portion 28 “is oxidized from the exposed side regions inwardly toward a centrally located aperture region 30.” See col. 3, lines 30-32. Thus, *Kim* does not disclose partially oxidizing every other layer. Further, the oxidized portion 28 taught by *Kim* is not in the first stack of layers adjacent the substrate, while claim 16 requires the first stack being formed on the substrate. For at least these reasons, claims 16-18 are not rendered obvious by *Kim*.

Further, neither *Jewell* or *Kim* teach layers of InP in the first mirror or an Aluminum content of less than 60% in the oxidized layers. As a result, there is no motivation to combine *Kim* and *Jewell* regarding claims 19-21 and claims 19-21 are believed to be in condition for allowance at least for these reasons.

Claims 31-36 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Jewell* in view of *Feld* et al. (U.S. Patent No. 6,680,964). The applicants traverse the rejection for lack of motivation for the proposed combination.

Claim 31 requires “a first mirror having six or less pairs of layers, wherein one layer of each pair of layers is an oxidized layer”. The background of the specification indicates that in order to achieve the required reflectivity for conventional mirrors, a large number of DBRs may be required. For example, lattice matched InP based mirrors . . . may require 45 or more periods. Sometimes 25 mirror pairs may be required.

*Jewell* states that “due to the large number of oxidized layers in some of the illustrations, the oxidized layers are identified by drawing fill texture rather than by numbers. *See* col. 6 line 68 – col. 7 line 2. In contrast to the large number of oxidized layers suggested by *Jewell*, new claims 31-34 require a first mirror having six or less pairs of layers, each pair of layers having an oxidized layer.

According to the Patent Office on page 6 of the office action, “it would have been obvious to the one having ordinary skill in the art at the time of the invention was made to provide the number of layers of the first mirror as few as six or less as taught by *Feld* because changing the number of mirror layers only affects the reflectivity of the mirror. In this case, it is such a design choice.”

“A rejection based on Section 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art. In making this evaluation, all facts must be considered. The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis. To the extent that Patent office rulings are so supported, there is no basis for resolving doubts against their correctness. Likewise, we may not resolve doubts in favor of the Patent Office determination when there are deficiencies in the record as to the necessary factual bases supporting its legal conclusion of obviousness.” *In re Warner*, 154, USPQ 173, 178 (CCPA 1967) (emphasis added).

The prior art of record does not suggest a combination of "a first mirror having six or less pairs of layers" and "wherein one layer of each pair of layers is an oxidized layer." Rather, the prior art has been found using the Applicant's claims as a blueprint. This is called impermissible hindsight reconstruction of the Applicants invention. The prior art must provide a motivation or reason for the worker in the art, without the benefit of applicant's specification, to make the necessary changes in the reference device." *Exparte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984). The mere fact that it is possible to find two isolated disclosures that might be combined in such a way to produce the [invention] does not necessarily render such production obvious unless the art also contains something to suggest the desirability of the proposed combination. *In re Bergel*, 130 USPQ 206, 208 (CCPA 1961). Thus, the Applicants respectfully request that the rejection of claims 31-34 be withdrawn.

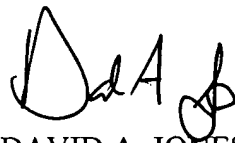
Claims 35 and 36 depend from claims 1 and 8 respectively. Thus, claims 35 and 36 are allowable at least for the reasons set forth above in regards to claims 1 and 8.

### CONCLUSION

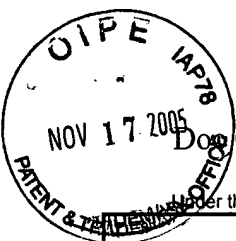
In view of the foregoing, Applicants believe the claims as amended are in allowable form. In the event that the Panel finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Panel is requested to contact the undersigned attorney.

Dated this 17 day of November, 2005.

Respectfully submitted,



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Doc Code: AP.PRE.REQ

PTO/SB/33 (07-05)

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**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Docket Number (Optional)

15436-440.11

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on 11/17/05Signature David A JonesTyped or printed name David A Jones

Application Number

10/606,104

Filed

June 25, 2003

First Named Inventor

Tzu-Yu Wang et al.

Art Unit

2828

Examiner

Phillip Nguyen

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.☐ assignee of record of the entire interest.  
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.  
(Form PTO/SB/96)☒ attorney or agent of record.  
Registration number 50,004☐ attorney or agent acting under 37 CFR 1.34.  
Registration number if acting under 37 CFR 1.34 \_\_\_\_\_

Signature

David A Jones

Typed or printed name

801-533-9800

Telephone number

11/17/05

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below\*.

☒ \*Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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